

Department of Marine Resources
Site Review #2016-06E

Maine Oyster, Inc.
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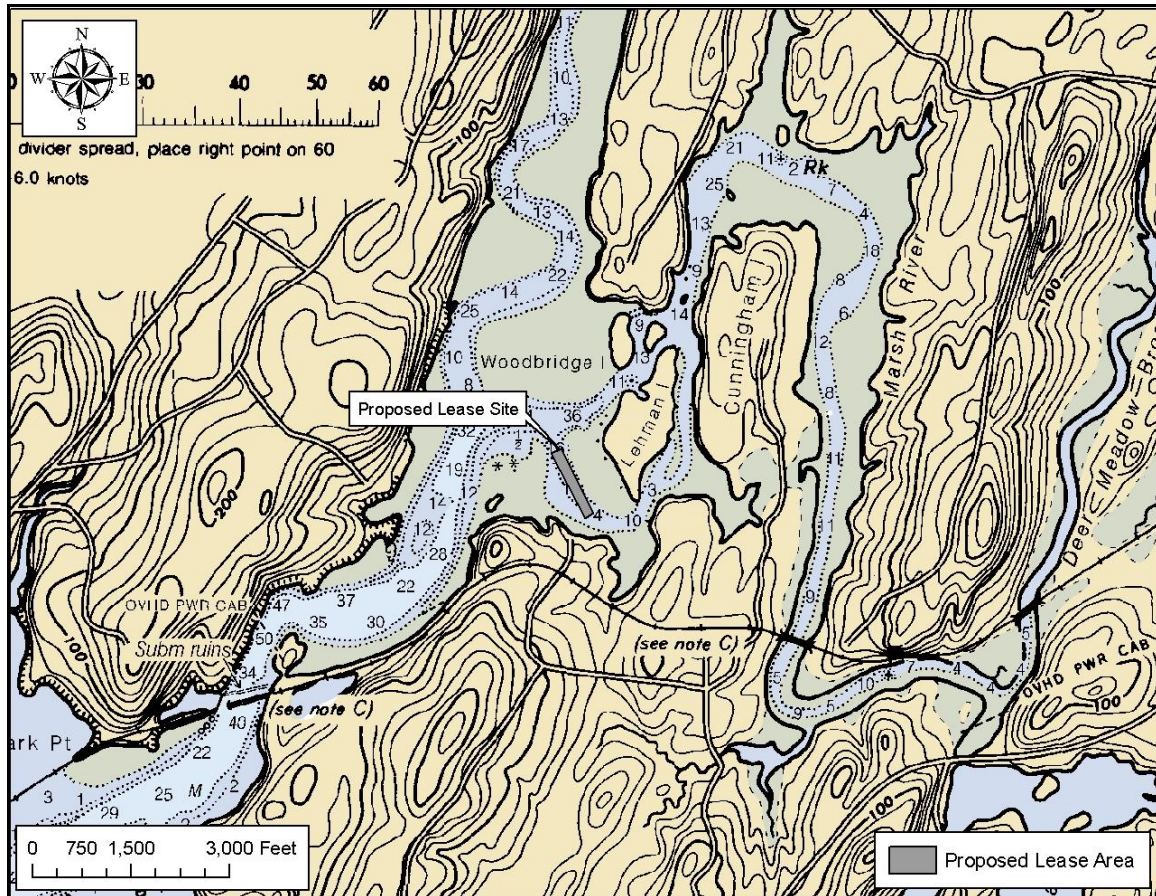


Figure 1*: Vicinity Map

Location: Southwest of Lehman Island, Upper Sheepscot River, Newcastle, Lincoln County, Maine

Purpose: Experimental lease for the bottom culture of American oysters (*Crassostrea virginica*)

Site Review by: Jon Lewis, Marcy Nelson, and Flora Drury

Report Preparation by: Jon Lewis, Marcy Nelson, and Flora Drury

January 10, 2017

* All figures in this report were created in ArcMap version 10.4 using digitized NOAA Nautical Charts or geo-referenced aerial photographs provided by The Maine Office of GIS (Low_Tide_ 2004).

On September 15, 2016 Maine Department of Marine Resources (MDMR) Scientists Jon Lewis, Marcy Nelson, and Flora Drury visited the proposed experimental aquaculture lease located southwest of Lehman Island in the Sheepscot River. MDMR staff arrived on site at approximately 12:15pm; the tide was in the ebb stage. An underwater analysis was conducted at this time, along with observations of wildlife, riparian ingress and egress, and navigation. MDMR staff revisited the site on December 8, 2016 to collect water depths within the proposed boundaries, arriving onsite at 10:06am.

The applicant is requesting 3.89 acres for the bottom culture of American oysters (*Crassostrea virginica*) near Lehman Island in the Sheepscot River. No gear is proposed for this lease with the exception of marker buoys to indicate lease corners. The applicant proposes to plant the area with American oysters (*C. virginica*) in the fall and harvest with a skiff drawn drag (43"W x 23"H x 10"L) April through December.

General Characteristics

The proposed lease occupies shallow waters in the channel located between the southwest side of Lehman Island and the mainland. A house, boathouse, and dock were observed to the east within 1,000 feet of the proposed lease site (Figure 2 and Image 4). Multiple other houses and at least one dock were observed in the vicinity of, but greater than 1,000 feet from, the proposed lease, on the Sheepscot River's western shore (Image 2). Upland characteristics consist of exposed ledge and areas populated with marsh grasses leading to mixed forest.

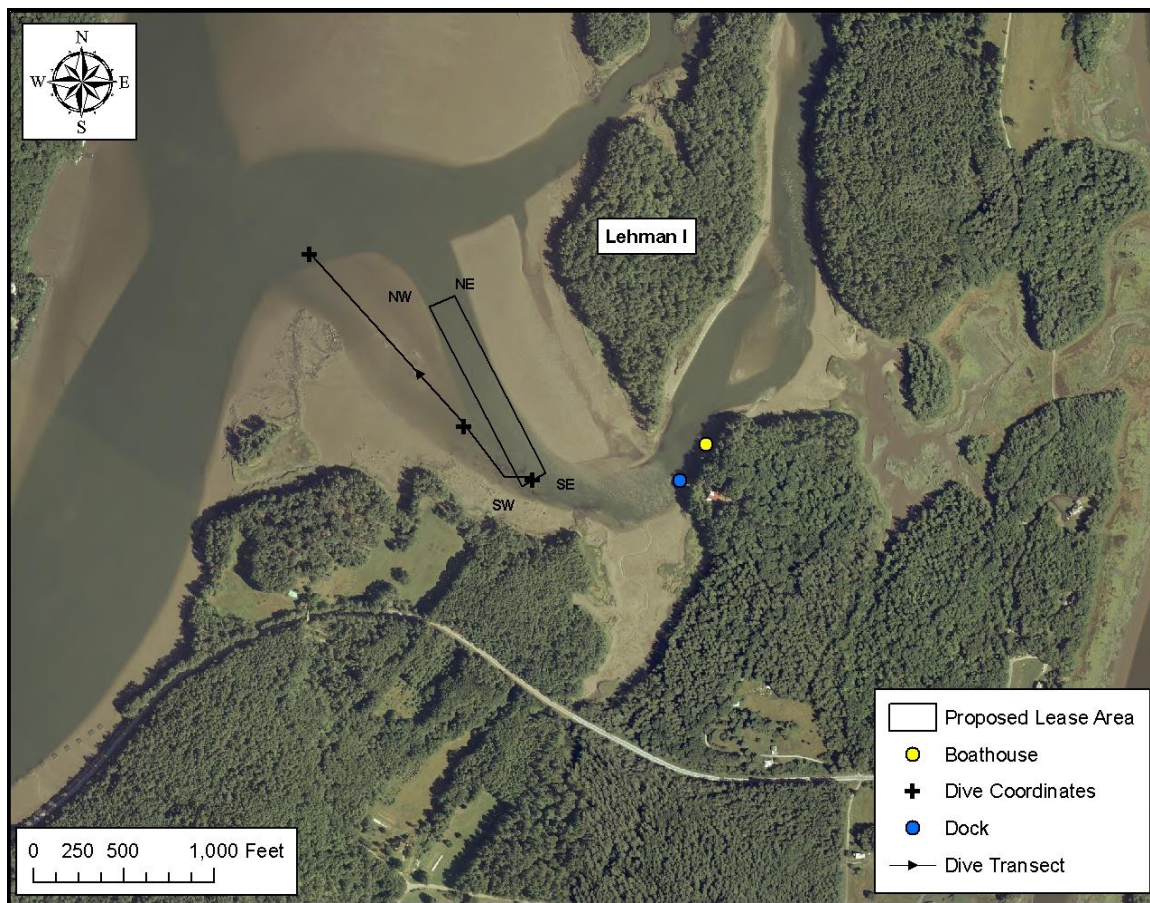


Figure 2*



Image 1: Southern boundary of proposed lease site looking east (September 15, 2016)



Image 2: Southern boundary of proposed lease site looking west (September 15, 2016)



Image 3: Southern boundary of proposed lease site looking north (September 15, 2016)

Depth

The predicted time of low tide for Wiscasset, Maine on December 08, 2016 was 11:21am. Tidal height was predicted at 0.76 feet above mean low water (MLW). High water was predicted to occur at 5:43pm and 9.46 feet above MLW.

Wiscasset, Sheepscot River (44.000° N, 69.6667° 'W)¹

Date	Time	Height
12/08	05:22 AM	9.52 H
12/08	11:21 AM	0.76 L
12/08	05:43 PM	9.46 H
12/08	11:46 PM	0.18 L

Water depths at 11:34am (the time of the Department's site assessment on December 08, 2016) ranged from 7 feet at the south west corner to 13 feet at the SE corner. Correcting to the nearest high water (+9.46'), results in water depths roughly 10 feet greater than depths observed during the Department's site

¹ <http://tbone.biol.sc.edu/tide/tideshow.cgi?site=Wiscasset%2C+Sheepscot+River%2C+Maine&units=f>

visit (17 to 23 feet). At mean low water (+/- 0.0') water depths can be expected to vary from approximately 6 feet to 12 feet.

Currents and Bottom Topography

MDMR scientists observed a current flowing to the northwest at approximately 2 knots during their underwater assessment. Due to this current only a small section of bottom topography within the proposed lease was observed. MDMR scientists observed gravel within the proposed lease site and firm mud to the west of the site (Figure 2). On their December 8, 2016 site visit, MDMR scientists observed current flowing to the northwest on the ebb tide.

Position and Distances to Shore

On September 15, 2016 and December 08, 2016 MDMR scientists utilized WAAS (Wide Area Augmentation System) GPS to navigate to each corner of the proposed lease site. POSAID Positioning Software was used to verify the distances and bearings between proposed lease corners. Distances to shore were determined using the measuring tool in ArcMap 10.4, digitized NOAA Charts, digital orthophotography provided by the Maine Office of GIS, Google Earth, and the application coordinates listed below.

Application Coordinates (WGS84) – 3.89 acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>
NE	44° 01' 26.76"N	69° 37' 17.52"W then 1099.14 feet at 152.18° True to
SE	44° 01' 17.16"N	69° 37' 10.50"W then 153.42 feet at 239.01° True to
SW	44° 01' 16.38"N	69° 37' 12.30"W then 1119.35 feet at 332.22° True to
NW	44° 01' 26.16"N	69° 37' 19.44"W then 152.88 feet at 66.58° True to "NE".

<u>Approximate Distances to Shore (Figure 2)</u>	
NW Corner to Nearest Point, West Bank of Sheepscot River (MLW)	~1,626 feet to the west
NW Corner to Nearest Mudflats	~70 feet to the west
NE Corner to Nearest Mudflats	~70 feet to the east
SE Corner to Nearest Mudflats	~120 feet to the east
SE Corner to Nearest Dock	~750 feet to the east
SW Corner to Nearest Point, Mainland (MLW)	~60 feet to the south

The criteria MDMR uses to determine the suitability of an experimental aquaculture operation to a particular area (DMR Regulations Chapter 2.64(7) (A)) are discussed, with respect to the proposal, below:

(1) Riparian Owners Ingress and Egress

The nearest documented dock, located on the eastern bank of the Sheepscot River, sits approximately 750 feet to the east of the proposed lease site. At the time of the Department's site visit in September of 2016, a ramp and float were attached to the dock; a skiff and a kayak were also observed (Image 4). A boathouse was also noted on the eastern bank of the Sheepscot River (Image 4). A house was located upland of the dock and boathouse (Figure 2). Other houses and docks were observed on the western shore of the Sheepscot River, more than 1,000 feet away from the proposed lease site.

Due to the fact that the applicant proposes to use the area for the bottom culture of American oysters and does not propose to use any gear on the site, with the exception of corner markers required by MDMR Regulations Chapter 2.80, it is unlikely that this proposed lease will impede the ingress and egress of riparian owners.



Image 4: Boathouse and dock observed in vicinity of proposed lease. Photo taken from the east side of Lehman Island looking south (September 15, 2016).

(2) Navigation

The lease in question proposes the bottom culture of American oysters and, with the exception of corner markers required by MDMR Regulations Chapter 2.80, does not propose to use any suspended gear. It is unlikely that navigation will be impeded by the proposed lease with the exception of time in which harvest is occurring via skiff drawn drag. At low tide the navigable channel between Lehman Island and the mainland to the southwest becomes narrow; in the event of low tide drag harvesting other vessels may have limited room to navigate the channel.

The main channel of the Sheepscot River lies more than 900 feet to the west of the proposed activities.

(3) Fishing

No fishing within the vicinity of the proposed lease site was observed on September 15, 2016 or December 8, 2016. It is likely that commercial clamming and worming, along with recreational fishing for striped bass (*Morone saxatilis*) occur in the area. It is also possible that wild oysters are harvested in the vicinity of the area discussed. The proposed lease is unlikely to disrupt commercial or recreational fishing in the area as it is located below the mean low water mark and will not be populated with gear. Additionally, the applicant has declared that their “activities would not exclude nor inhibit lobstering or angling in the area of the lease.”

(4) Other Aquaculture Uses

The names and distances to the DMR leases and licenses nearest the proposal are listed below and displayed in Figure 3. Distances were measured, straight-line, in ArcMap version 10.4.

The applicant, **Maine Oyster, Inc.**, has two existing aquaculture leases for the culture of American oysters located within 1 mile of the proposed experimental lease. **SHE LE2**, a 1.57 acre lease sits ~1,250 feet to the east of the proposed lease. **SHE LE**, a 2.97 acre lease, sits ~1,780 feet to the northeast of the proposed lease. Additionally, Maine Oyster, Inc. has a pending lease currently referred to by its **DMR Docket #2016-10E** that sits ~840 feet to the east of the proposed lease.

Paul Farmer has a LPA license for the culture of American oysters (**FARM114**) 1.09 miles to the northeast.

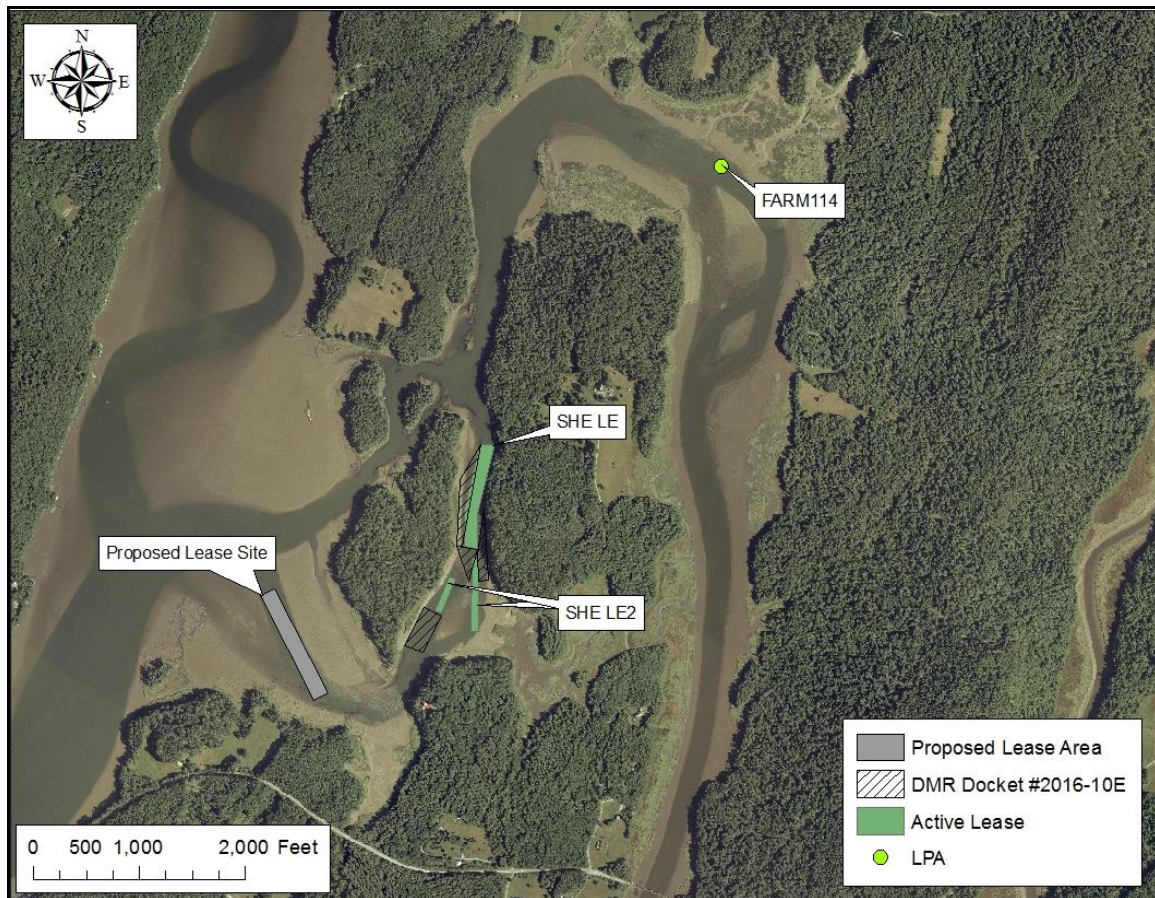


Figure 3*: Nearby aquaculture leases and licenses

(5) Existing System Support

On September 15, 2016, a handheld digital video camera contained within an underwater housing was used to document the epibenthic ecology of the surrounding area (Image 5). Due to strong currents in the area at the time of the underwater site assessment, only a small portion of the site was documented. Sugar kelp (*Saccharina latissima*) and sea lettuce (*Ulva lactuca*) were observed on the bottom in the vicinity of the proposed lease site as were other Phaeophyta and Rhodophyta. Green crabs (*Carcinus maenas*) and hermit crabs (*Pagurus sp.*) were also observed.



Image 5: Underwater view of proposed lease site (September 15, 2016)

Eelgrass (*Z. marina*)

No eelgrass was observed during MDMR's underwater assessment of the proposed lease site and historical records of eelgrass distribution do not indicate the presence of this species in the discussed area (Figure 4).

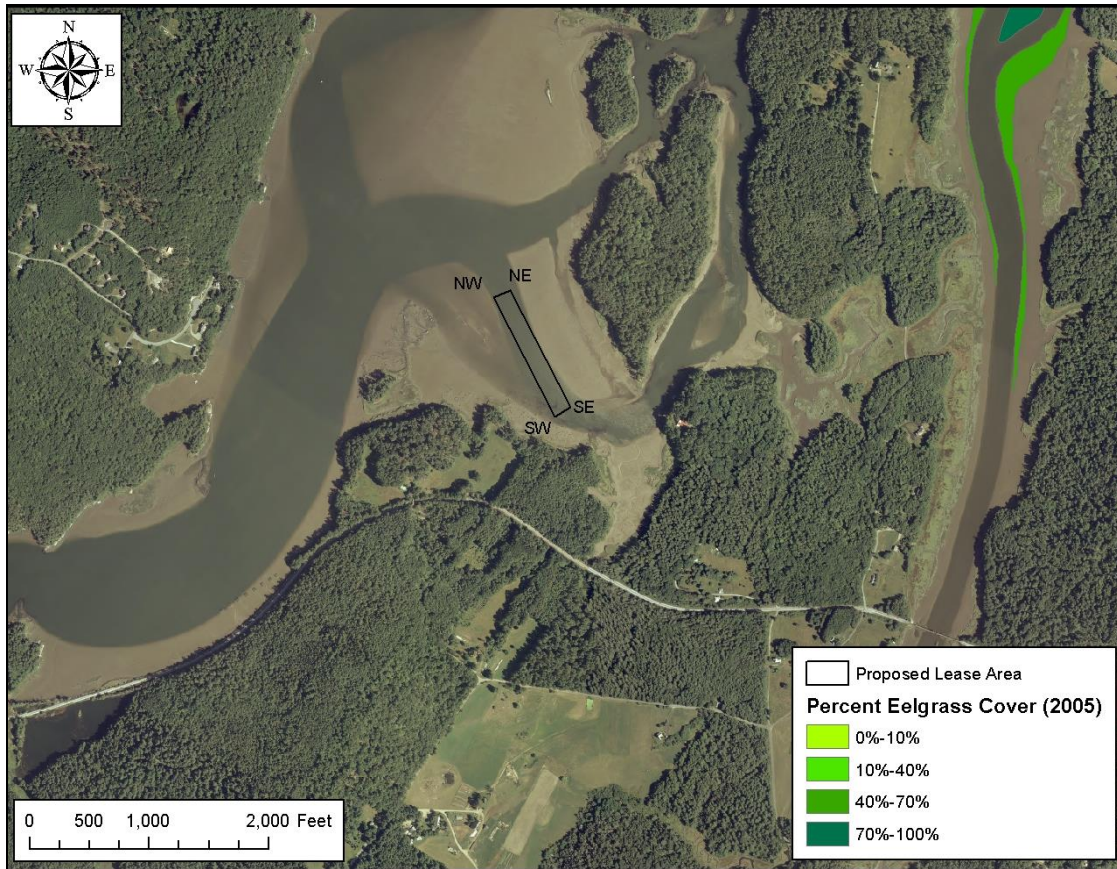


Figure 4*

Wildlife

Double-crested cormorants (*Phalacrocorax auritus*), yellowlegs (*Totanus sp*), and a bald eagle (*Haliaeetus leucocephalus*) were observed by MDMR scientists in the vicinity of the proposed lease site on September 15, 2016. The proposed site borders, but does not overlap with, Tidal Waterfowl/Wading Bird Habitat classified by The Maine Department of Inland Fisheries and Wildlife (Figure 5). A copy of the application was sent to the Maine Department of Inland Fisheries and Wildlife on April 27, 2016. According to Keel Kemper (Reviewing Biologist), in comments submitted to MDMR on May 25, 2016, “Minimal impacts to wildlife are anticipated.”

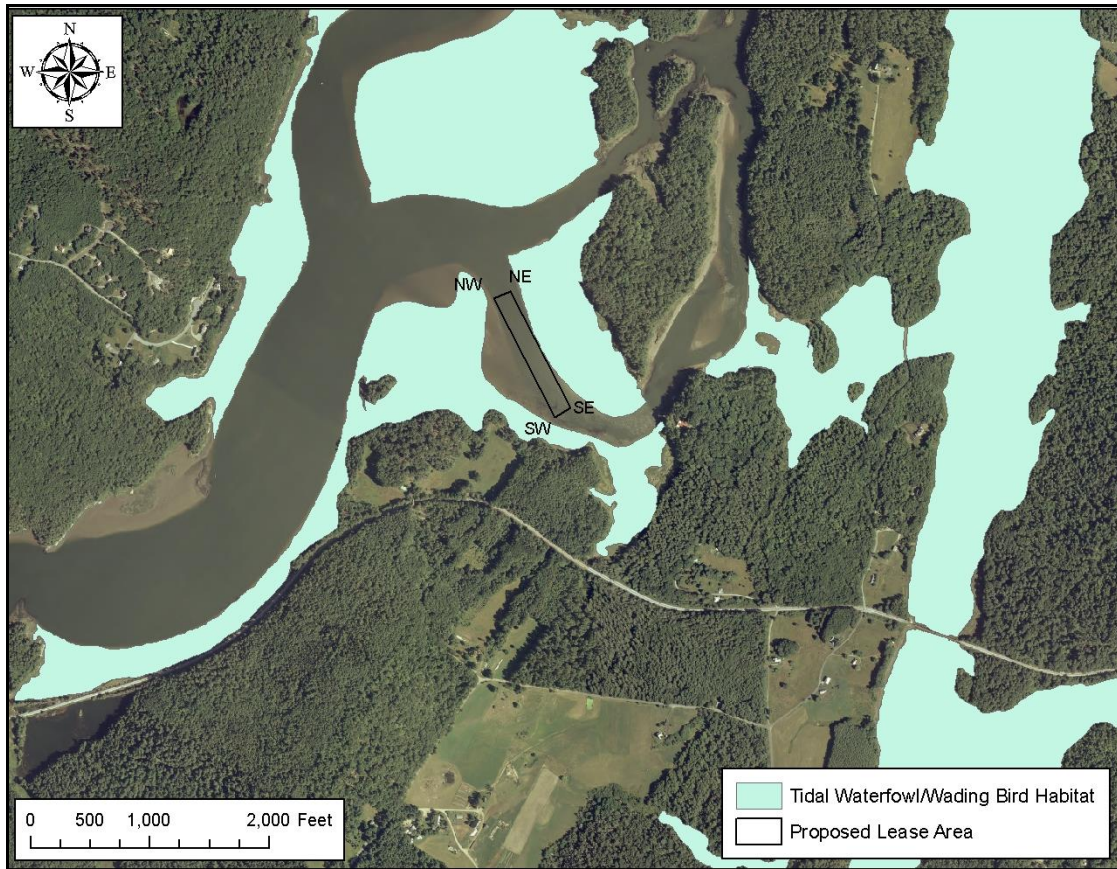


Figure 5*

(6) Interference with Public Facilities

There are no public docking facilities, public beaches, or conserved lands owned by the federal, state, or municipal government within 1,000 feet of the proposed lease (Maine Office of GIS: *Conserved_Lands* published 07/15/2016).

(7) Water Quality Classification

The proposed lease is in an area currently classified by the Department of Marine Resources Water Quality Classification program as “open/approved for the harvest of shellfish”.